

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

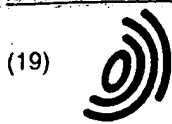
Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11) EP 0 887 987 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
04.10.2001 Bulletin 2001/40

(51) Int Cl.7: H04M 1/72, H04B 1/38

(43) Date of publication A2:
30.12.1998 Bulletin 1998/53

(21) Application number: 98202094.3

(22) Date of filing: 23.06.1998

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(72) Inventor: Koike, Kunihiro
Setagaya-ku, Tokyo 154 (JP)

(74) Representative: SERJEANTS
25, The Crescent
King Street
Leicester, LE1 6RX (GB)

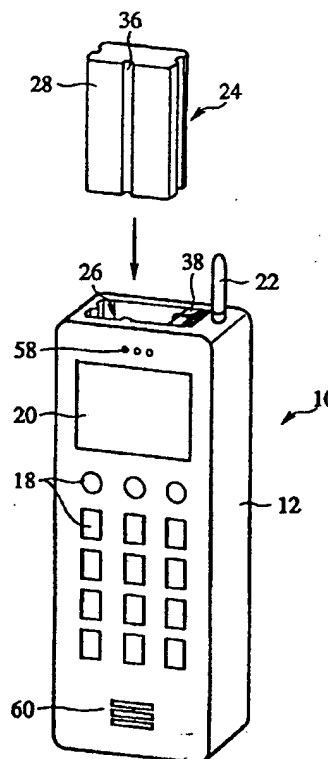
(30) Priority: 24.06.1997 JP 16691697

(71) Applicant: Koike, Kunihiro
Setagaya-ku, Tokyo 154 (JP)

(54) Telephone transmitting/receiving unit and mobile communication terminal

(57) A telephone transmitting/receiving unit (24) comprising an electronic circuit having a function of converting a signal received by an antenna (22,42) to signal to be output by a speaker (58), a function of converting a voice signal input by a microphone (60) to a signal to be output by the antenna (22), a function of performing prescribed processing based on a signal from an operational unit (70), a function of generating a signal to be displayed in a display unit (20), a cartridge (28) for removable loading in a slot (26) formed in a mobile communication terminal (10,78,88,94), and an input/output unit (30) for inputting/outputting a signal to/from the mobile communication terminal. The telephone transmitting/receiving unit (24) is loaded in the mobile communication terminal (10,78,88,94), whereby mobile communication can be performed by the use of the mobile communication terminal. The telephone transmitting/receiving unit (24) is applicable to various types of mobile communication terminals, so that mobile communication can be provided suitable to a time, place and occasion without employing a plurality of circuits but by employing a single circuit.

FIG. 1



EP 0 887 987 A3



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 20 2094

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.6)
X	EP 0 670 637 A (TELEFUNKEN MICROELECTRON) 6 September 1995 (1995-09-06) * column 3, line 11 - column 5, line 24; figures 1-6 *	1,2,5	H04M1/72 H04B1/38
X	WO 95 34958 A (APPLE COMPUTER) 21 December 1995 (1995-12-21) * page 6, line 15 - page 14, line 15; figures 1-13 *	1,2,5	
A	WO 96 41426 A (ERICSSON TELEFON AB L M) 19 December 1996 (1996-12-19) * page 10, line 30 - page 11, line 22; figure 1 * * page 12, line 29 - page 18, line 2; figures 5-8 * * page 23, line 18 - page 30, line 4; figures 17-21 *	3,4	
A	DE 195 26 730 A (MOTOROLA INC) 29 February 1996 (1996-02-29) * column 2, line 12 - column 5, line 12; figures 1-3 *	1,2,5	TECHNICAL FIELDS SEARCHED (IntCl.6) H04M H04B
A	EP 0 680 155 A (IBM) 2 November 1995 (1995-11-02) * column 2, line 17 - column 5, line 28; figures 1-5 *	1,2,5	
A	WO 94 29968 A (MITSUI COMTEK CORP) 22 December 1994 (1994-12-22) * page 5, line 10 - page 10, line 2; figures 1-8 *	1,2,5	
-/--			
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 12 April 2001	Examiner DELANGUE, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03/02 (P04/C01)



European Patent
Office

Application Number

EP 98 20 2094

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☒ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

1-6



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 98 20 2094

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
A	US 5 465 401 A (THOMPSON) 7 November 1995 (1995-11-07) * column 6, line 44 - column 7, line 20; figure 1 * * column 9, line 31 - column 10, line 65; figures 7,8 * * column 14, line 45 - column 15, line 45; figure 10 * ---	1,2,5	
A	EP 0 521 609 A (NOKIA MOBILE PHONES LTD) 7 January 1993 (1993-01-07) * column 3, line 38 - column 6, line 27; figures 1-4 * -----	1,2,5	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
<p>The present search report has been drawn up for all claims</p>			
Place of search THE HAGUE		Date of completion of the search 12 April 2001	Examiner DELANGUE, P
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P04C01)



European Patent
Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number

EP 98 20 2094

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. Claims: 1-6

Telephone radiofrequency transmitting and receiving module
which can be inserted in a personal handy phone, a personal
digital assistant or portable computer for providing
wireless communications

2. Claims: 7,8

Communication service system for receiving data